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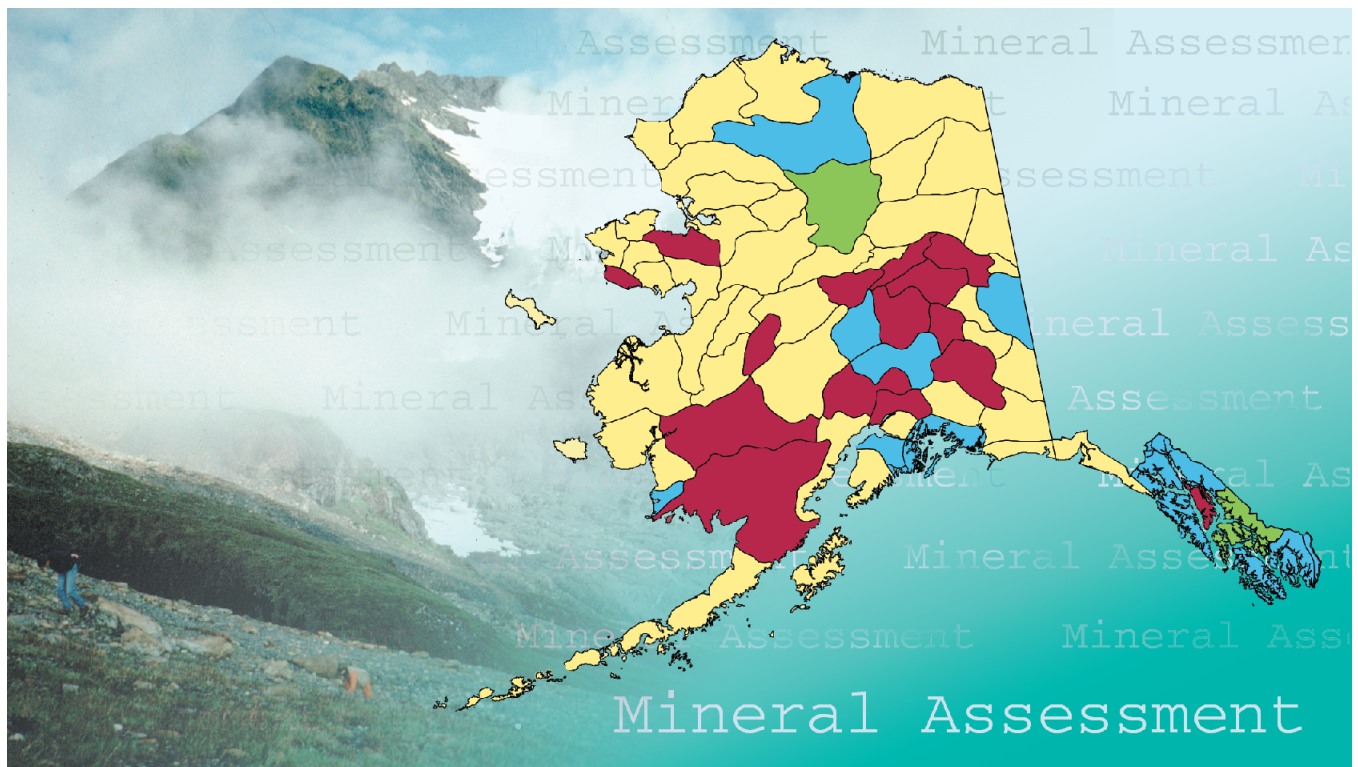


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## **Bureau of Land Management Mineral Assessment in Alaska**

Developing a Plan for Completing BLM's  
ANILCA, Section 1010 Responsibilities  
to Conduct Mineral Assessment of the Federal Lands



BUREAU OF LAND MANAGEMENT  
MINERAL ASSESSMENT IN ALASKA

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## **EXECUTIVE SUMMARY**

In 1996, the Bureau of Land Management (BLM) assumed responsibility from the U.S. Bureau of Mines for conducting assessments of mineral resources on Federal land in Alaska. This program, authorized by Section 1010 of ANILCA (Alaska National Interest Lands Conservation Act) has been ongoing since the 1980s. This document is designed to promote public input into the BLM's decision making process for selecting areas for future mineral assessment studies, and to determine the extent of future efforts. Public and agency input will be incorporated into a long range plan for completing the BLM mineral assessment responsibilities in Alaska.

Although special or site specific studies are required from time to time, the primary thrust of the BLM's mineral assessment program is regional "mining district" studies. The objective of mining district studies are to determine the type, amount and distribution of mineral deposits, and make resource estimates when possible. These studies consist of locating, sampling, surveying and mapping historic mines, prospects and occurrences, and following up on newly discovered mineralization.

Currently, studies are underway in the Stikine and Koyukuk areas, and ground follow up is planned in areas where geophysical surveys have recently been flown. After completion of this work, the BLM plans to undertake further mining district studies. To determine what areas should be studied and in what priority, the BLM is soliciting comment from potential users of this information.

This document contains a discussion of what mineral assessments are and how they are organized. The remaining unstudied areas of Alaska are prioritized as to where future mineral assessments should be conducted. The principal areas that have been identified for study are discussed in detail.

The approach used is to prioritize mining districts according to which have the highest numbers of existing mining claims and known mineral occurrences. Using this approach, plans would call for a multi-year study in the Circle mining district, which would include adjacent parts of the Fairbanks and Tolovana mining districts. Concurrently or subsequently, a one year follow up study of the Ketchikan area would be undertaken, and then study of the Admiralty Island mining district would commence. At the conclusion of the Circle and Admiralty studies, work would begin in the Delta River and adjacent areas in the Chistochina mining district. And depending on funding, a concurrent or subsequent study of Federal land in the Aniak, including portions of the Iditarod, McGrath, Anvik, Innoko and Marshall mining districts would be undertaken.

The BLM would continue to conduct special studies that from time to time are required by events or issues. Special mineral assessment and economic studies might involve lands slated for land exchanges, or in support of land planning and other public purposes. Depending on funding and personnel availability, special studies might require changes to this proposed schedule.



## **INTRODUCTION**

In 1996, Congress transferred the U.S. Bureau of Mines (BuMines) offices in Juneau and Anchorage, Alaska to the Bureau of Land Management (BLM). Funding was allocated for assessment of the mineral potential of Federal lands in Alaska as required by Section 1010 of ANILCA (Alaska National Interest Lands Conservation Act). During 1996, the BLM evaluated the capabilities and mission of the new staff, as well as its own minerals mission and capabilities to determine how best to integrate the new organization into BLM's Alaska operations.

In October 1997, the BLM finalized the integration by merging the new staff in Anchorage with its state office's lands and minerals staff to form a new branch. The new BLM office in Juneau was set up as a separate branch office. Both offices contain a minerals assessment team and report directly to BLM's Deputy State Director of Lands, Minerals and Resources.

As part of this reorganization, the BLM desired to create a plan for completing the "mineral assessment" work required by Section 1010 of ANILCA. During 1998, a workgroup made up of BLM's mineral assessment staff was organized to develop this draft plan. It is the BLM's intent to use this draft plan to obtain input from the various customer groups that make use of mineral assessment studies in Alaska.

This draft plan discusses what mineral assessments are, how they are organized and approached, and prioritizes the remaining areas of Alaska where future mineral assessments may be conducted. The principal areas that have been identified for study are discussed in detail. This plan proposes to complete the BLM's Section 1010 responsibilities for large regional "mineral assessment" studies, except for site specific and maintenance work. A process is outlined for public comment and review by potential customers.

## **MINERAL ASSESSMENTS**

To understand the intent of Congress concerning mineral assessments in Alaska, one needs to understand some background. The current approach for mineral assessment began to take form when in 1964 the BuMines and the U.S. Geological Survey (USGS) were authorized to undertake "mineral surveys" of proposed and existing wilderness and primitive areas. The BuMines conducted a number of studies in conjunction with the USGS.

In 1980, ANILCA authorized the continued assessment of minerals on public lands to expand the mineral information database. Having developed an extensive capability to mount large-scale field investigations and with this Congressional support, the BuMines undertook long-term projects called "Mining District Studies."

The BuMines approach to evaluating mineral resources in a mining district required having geophysical and geochemical data, as well as geologic mapping available for an area. The BuMines relied on the USGS and the Alaska Division of Geological and Geophysical Surveys to

supply this information, and where it was not available BuMines sponsored this initial work.

The BuMines' Mining District Studies then build on this foundation and had three components: 1) a field survey of known and suspected mineral deposits, 2) economic feasibility studies, and 3) where needed, engineering and environmental studies.

To date, a number of mining district studies have been completed and others are in progress, see figure 1. Currently, the BLM is conducting studies of the Kupreanof and Petersburg mining districts in southeast Alaska, and the Koyukuk mining district in north central part of the state. In addition, the final report for the Chichagof mining district study in southeast Alaska has just been released.

Recently airborne geophysical surveys have been used for obtaining greater understanding of the geology and mineral resources on Federal lands. The BLM has been a partner in airborne geophysical surveys recently completed near Wrangell in the Kupreanof and Petersburg mining districts, and near Wiseman in the Koyukuk Mining District. A geophysical survey of area around Ketchikan and on Prince of Wales Island is being flown this spring. Funding is currently available for further geophysical surveys, and areas are currently being evaluated.

To summarize, mineral assessment activities in Alaska have been ongoing since the 1960's. Currently, the approach is to:

- Conduct general field surveys of metallic and industrial mineral deposits on a mining district scale,
- Conduct cost and economic feasibility studies, and engineering and environmental studies of particular types of mineral deposits in mining districts,
- Conduct site specific studies of particular deposits, which may address geological, geophysical, mineral resource, environmental, engineering, land planning and/or regulatory issues,
- Publish the results of all studies, and ensure wide distribution and awareness of this work to our various customer groups.

In addition, on-going work will include:

- Issue-oriented studies as needed,
- Updating completed mining district studies as needed,
- Respond to inquiries concerning mineral resources in Alaska.

Aggregated, these areas of work can be characterized as the ANILCA Section 1010 Mineral Assessment studies authorized by Congress. In addition, the BLM has authority to conduct land management studies on Federal public lands, such as mineral inventories (Section 102 of Federal Land Policy and Management Act).

A report is available on the Internet that describes the BLM's evaluation of how the mineral assessment program fits into the BLM. (<http://imcg.wr.usgs.gov/usbmak/matmain.html>)

## **PRIORITIZATION OF REMAINING MINING DISTRICT STUDIES**

Although special or site specific studies are required from time to time, the primary thrust of the BLM's mineral assessment program is regional mining district studies. Therefore, the primary interest in planning for the completion of this work is the ranking of Federal mineral lands in Alaska that have not been evaluated to date. In the past, priorities were developed for mining district studies by consulting with other Federal agencies, such as the BLM and the Forest Service, as well as guidance from the congressional delegation and other interested parties.

The BLM workgroup assumed that the BLM will continue approaching the work from a mining district point-of-view. Mineral assessment studies could be based on other geographic boundaries, such as USGS quadrangles. However, the mining district approach has advantages. Mining district outlines are largely based on watershed boundaries. This fits well with the ecosystem approach to land evaluation and planning being used by land management agencies. The approach has been flexibly used. Study boundaries have been expanded when it made sense to incorporate adjacent areas.

The workgroup first prioritized mining districts in Alaska according to their "potential for future mineral production." To do this, the group evaluated various methods of prioritizing mining districts. After evaluating several approaches, the workgroup developed a simple method using numbers of known mineral locations and active mining claims to create a preliminary prioritization of mining districts. Table 1 shows a ranking of the most mineralized of the 75 mining districts in Alaska using this approach.

The number of known mineral locations within a mining district was taken from the Mineral Industry Location System (MILS) database. This database contains most of the known mineral occurrences in Alaska. The workgroup believes this figure is a good measure of past mineral activity. The workgroup thought that the number of currently-active state and Federal mining claims in a mining district gives a good representation of where current exploration interest and activity is located.

The results of the preliminary prioritization were then reviewed in light of other factors. These included the distribution of mineral locations, mineral terranes and land status for each mining district. Using a geographic computer program (ArcView) that allows viewing of multiple layers of data, the group reviewed these factors in each of the top 25 prioritized mining districts.

Of the top 25 mining districts, ten have been or are being studied. These include Juneau, Ketchikan, Valdez Creek, Koyukuk, Fortymile, Hope, Prince William Sound, Chichagof, Kupreanof, and Kantishna, see figure 1. The 15 top-rated mining districts that have not been studied include the Fairbanks, Circle, Admiralty, Bristol Bay, Delta River, Nome, Bonnifield,

Table 1 – Percentages of state and federal mining claims, and MILS points in Alaska, plus combined figure.

<b>District</b> Districts studied or being studied are shown in bold type	<b>Percent State Claims</b>	<b>Percent Federal Claims</b>	<b>Percent MILS*</b>	<b>(%State+%Federal Claims)*%Mineral Locations</b>
FAIRBANKS	21.4	3.6	4.5	113.3
<b>JUNEAU</b>	3.0	14.1	5.7	98.2
<b>KETCHIKAN</b>	0.3	11.5	6.8	80.2
CIRCLE	5.6	4.2	4.3	42.4
<b>VALDEZ CREEK</b>	5.2	5.1	3.8	39.3
<b>KOYUKUK</b>	1.8	6.3	4.4	35.1
<b>FORTY MILE</b>	3.5	2.4	2.5	14.7
ADMIRALTY	0.2	12.9	0.9	12.2
BRISTOL BAY	8.2	0.0	1.2	10.0
<b>HOPE</b>	0.3	3.3	2.6	9.5
DELTA RIVER	4.4	4.6	1.0	9.1
NOME	2.2	0.4	3.5	9.1
BONNIFIELD	3.6	0.4	2.2	8.8
YENTNA	3.2	1.0	1.3	5.6
WILLOW CREEK	1.5	0.5	2.5	5.0
HOT SPRINGS	2.7	1.2	1.2	4.6
<b>PRINCE WILLIAM</b>	0.4	0.3	5.3	3.8
<b>CHICHAGOF</b>	0.0	1.1	3.1	3.7
<b>KUPREANOF</b>	0.1	3.5	1.0	3.5
INNOKO	2.3	1.1	0.9	3.0
FAIRHAVEN	1.7	0.4	1.5	3.0
TOLOVANA	2.4	0.9	0.9	3.0
<b>KANTISHNA</b>	0.1	1.2	2.2	2.9
ANIAK	1.3	0.6	1.4	2.8
CHISTOCHINA	0.9	0.1	2.7	2.8
COUNCIL	1.1	0.1	2.2	2.5
RUBY	2.0	0.4	0.9	2.3
KOUGAROK	0.7	0.8	1.4	2.0
MCGRATH	0.7	0.8	1.3	2.0
CHISANA	0.0	1.3	1.5	1.9
GOODPASTER	4.1	0.0	0.4	1.7
NIZINA	0.0	1.4	1.2	1.6
NELCHINA	0.8	0.1	1.4	1.4
TOK	2.5	0.0	0.5	1.3

RAMPART	0.9	1.5	0.5	1.3
CHANDALAR	1.4	0.0	0.8	1.2
LISBURNE	1.0	4.0	0.2	1.1
EAGLE	1.5	0.1	0.7	1.1
NOATAK	2.3	0.2	0.4	1.0
IDITAROD	1.1	1.5	0.4	0.9
KODIAK	0.9	0.0	1.0	0.8
ANCHORAGE	0.2	0.3	1.5	0.8
<b>HYDER</b>	0.0	0.8	0.9	0.7
<b>PETERSBURG</b>	0.0	0.4	1.8	0.7
KIANA	0.5	0.5	0.7	0.7
<b>GOODNEWS BAY</b>	0.0	1.6	0.4	0.7
SHUNGNAK	0.2	0.4	0.8	0.5
YAKATAGA	0.2	0.8	0.5	0.5
PORT CLARENCE	0.3	0.7	0.5	0.5
KOYUK	0.1	0.4	0.7	0.4
MELOZITNA	0.5	0.0	0.7	0.4
REDOUBT	0.4	0.0	0.9	0.3
SERPENTINE	0.2	0.4	0.4	0.2
ALASKA PENINSULA	0.2	0.0	0.8	0.2
HUGHES	0.0	0.4	0.3	0.1
HOMER	0.0	0.0	1.2	0.0
KAIYUH	0.0	0.2	0.1	0.0
ANVIK	0.0	0.0	0.2	0.0
SEWARD	0.0	0.0	0.3	0.0
MARSHALL	0.0	0.0	0.2	0.0
SHEENJEK	0.0	0.0	0.2	0.0
ALEUTIAN ISLANDS	0.0	0.0	0.2	0.0
BARROW	0.0	0.0	0.3	0.0
BERING SEA	0.0	0.0	0.2	0.0
BETHEL	0.0	0.0	0.3	0.0
BLACK	0.0	0.0	0.1	0.0
CANNING	0.0	0.0	1.1	0.0
<b>COLVILLE</b>	0.0	0.0	0.9	0.0
SELAWIK	0.0	0.0	0.1	0.0
WAINWRIGHT	0.0	0.0	0.2	0.0
YAKUTAT	0.0	0.0	0.8	0.0
YUKON FLATS	0.0	0.0	0.1	0.0
Total	100.0	100.0	100.0	

\* Mineral Industry Location System database

Yentna, Willow Creek, Hot Springs, Innoko, Fairhaven, Tolovana, Aniak, and Chistochina districts, see figure 1.

Of the remaining districts, the BLM does not recommend conducting large scale mining district studies, but rather would approach these areas on an issue-specific basis. Issues might include land managements issues, commodity-specific studies, and other studies.

## **DISCUSSION OF HIGHEST-RANKING UNSTUDIED MINING-DISTRICTS**

The following is a discussion of the mining districts, unstudied by BuMines or BLM, that ranked highest for mineral assessment. Items covered include the percentages of Federal, state and private lands within the mining district, how the land status corresponds to past and present minerals development activity, the presence of known mineral locations (MILS points), the percentage of all Federal mining claims in Alaska and the percentage of all state mining claims. Federal ownership is broken down by managing agency, including the BLM, National Park Service (NPS), Fish and Wildlife Service (F&WS), and Forest Service. Significant geologic terranes and mineral production are noted. A preliminary conclusion is made concerning each district.

Mining Districts are listed in the order of priority described in the previous section and shown on Table 1. Generalized maps are included that show land ownership, active mining claims, mineral deposit locations, and mineral terranes for each district.

1. FAIRBANKS: (figure 2) The district ranks high because of a large number of State mining claims; 21% of active State claims are in the Fairbanks district. Less than 4% of the active Federal mining claims in Alaska are in the district. About 87% of the district is State land and has already been well studied by the State as well as private industry. Federal land makes up about 11% of the district with about 1% Native and 1% private. The Federal land that occurs in the district is small and most lies adjacent to the Circle and Tolovana districts. The mineral terranes upon which many MILS points and claims are located, granitic and felsic volcanic rocks, trend into the Circle district. Areas of interest within this district could be studied along with the Circle district (see figure 3 for expanded Circle district study area). It is recommended that this district not be studied by itself.

2. CIRCLE: (figure 3, including adjacent areas of Fairbanks and Tolovana districts) About 67% of the land in the Circle district is Federal land,(25% BLM, 11% F&WS, 31% NPS). There are some MILS points and active Federal claims on NPS land, but no MILS points occur on F&WS land. Some Federal land occurs in areas of high mineral potential, but most of the activity is on State land. The district includes 4.2% of active Federal claims and 5.6% of active State claims. Claims and MILS locations are associated with a felsic volcanic terrane, although most are situated in an area not marked by any mineral terrane. The district is the fourth largest placer producer in the State. Parts of the Fairbanks and Tolovana districts could be studied within a broader Circle mining district study (see figure 3). The Circle district has a very high priority for

mineral assessment given the land status and mineral activity cited above.

3. ADMIRALTY: (figure 4) The Admiralty district contains the most active Federal claims of any unstudied district in Alaska (12.9%). It has about 0.2% of the State claims. Eighty percent of the district is made up of Federal land; much of it is included within the Admiralty National Monument. About 14% of the district is Native land, less than 1% State, and about 5% private. The Admiralty district includes the only operating mine in southeast Alaska, the Greens Creek Mine, which is the largest silver producer in North America. The Greens Creek Mine is within the Admiralty National Monument as are additional active claims (Pyrola claims). Most MILS and claim locations are within a terrane of mafic volcanic rocks. This unit makes up about 30% of the district. The Admiralty district has a very high priority for mineral assessment.

4. BRISTOL BAY: (figure 5) The Bristol Bay district ranks high because of a single large group of State claims, specifically those of the Pebble Copper property. It includes 8.2% of active State mining claims, but only 0.02% of active Federal mining claims. Although about 45% of the land is Federal, only 6% of the land is the BLM managed and almost no MILS or active claims are included in the BLM land. The other Federal land in the district is managed by the F&WS (15%) and the NPS (23%). Pebble Copper is a porphyry deposit associated with an intermediate granitic mineral terrane. The BLM land in the area is not associated with the granitic terranes in the district. Granitic terranes do coincide with Federal land, but are mostly found on F&WS and NPS lands. The district is given a medium priority for mineral assessment due to the scarce mineral activity on Federal land.

5. DELTA RIVER: (figure 6, includes northern portion of Chistochina district) This district includes about 4.5% of both the active Federal and State mining claims. About 63% of the district is made up of State land, with about 36% Federal, less than 1% Native and about 1% private land. Twenty-five percent of the district belongs to the military and about 11% to the BLM. Most mineral activity is concentrated on State land. Nonetheless, a significant proportion of the active claims are included in the area of the BLM managed Federal land, outside the military holdings. The Delta River district is adjacent to the Goodpaster district, which contains the recently discovered Pogo gold deposit. MILS locations are generally concentrated on mineral terranes of mafic volcanic and ultramafic rocks. There is potential for VMS deposits as well as other types including: skarn, mafic-ultramafic related, porphyry, and vein. There has been minor placer gold production from the district as well. The Delta River district has a very high priority for mineral assessment. It is recommended that the northern portion of the Chistochina district be included with this study (see figure 6).

6. NOME: (figure 7) Almost all of the Nome district is made up of either State (42%) or Native (58%) land. Very little Federal land (0.3%) occurs in the district and no mineral activity is indicated on it. The area has been well studied by the State as well as private industry. Most of the MILS locations and Federal claims are on Native land. There is also a large block of State claims with MILS locations on State land. The dominant mineral terranes in the area are 'graywacke and shale' and a sedimentary and volcanic unit. The district is known mainly for its

placer gold production, but recent attention has focused on the lode source of the placer gold. Given the scarcity of Federal land, and the fact that the area has been well studied, the district is given only a medium priority for mineral assessment. It is recommended that this district not be studied by the BLM.

7. BONNIFIELD: (figure 8) This district ranks high because of a preponderance of State claims. It includes 3.6% of active State claims, but only 0.4% active Federal claims. The few Federal claims are on State land as well. Most land in the district belongs to the State (70%), which includes almost all of the high mineral potential lands. About 22% of the land is Federal; 8% NPS and 14% military, 0.2% BLM. A little over 7% of the land is Native. There are a few MILS locations on NPS land, but no locations on military land. The small amount of BLM land includes only 2 to 3 MILS points. There is some potential for VMS-type deposits in the district. This district has only a medium priority for mineral assessment due to the low mineral potential on the small amount of Federal land.

8. YENTNA: (figure 9) Much of the Yentna district, 84%, is made up of State land. Thirteen percent is Federal land, almost all of which is managed by the NPS (0.6% BLM land), and 3% is Native. The district includes 3.20% of the active State claims, but less than 1% of the active Federal claims. All of the State and Federal claims are on State land. There are no MILS or active claims on the BLM land. The Yentna district is mainly a placer district. There is some VMS potential as well. The Yentna district has only a medium mineral assessment priority because it is made up mostly of State land.

9. WILLOW CREEK: (figure 10) The Willow Creek district includes the Hatcher Pass recreational area accessible from Anchorage. About 87% of the district is made up of State land and about 8% is Native. All the mineral activity, past and present, is on State land. The district includes 1.5% active state claims and 0.5% active Federal claims. The BLM manages less than one percent of the area, which includes no MILS locations or active claims. Historic gold production from the district is over 525,000 ounces, mainly from lode sources. There are some placer prospects in the area and some coal production. The district has only a medium mineral assessment potential because it is made up mostly of State and Native land and there is little mineral activity on the Federal land.

10. HOT SPRINGS: (figure 11) About 11% of the land in the district is Federal land, about 70% is State and 19% Native. There are 2 blocks of BLM land that constitute about 8% of the area. The other Federal land is managed by F&WS (3%). There are no MILS locations or active claims in either the BLM or F&WS areas. About 90% of the active claims in the area are on State land. The rest are on Native land. The Federal claims in the area (1.22% of active claims) are also on State land. The district includes 2.7% of active State claims. Most of the MILS points represent placer prospects and are situated in two main groups. There has been little additional lode activity, mainly on vein-type deposits. Given the small amount of mineral activity on Federal land, the district is given only a medium priority for mineral assessment.



11. INNOKO: (figure 12) The Innoko district includes 2.3% of active State claims and only 1.1% of active Federal claims. About 84% of the district is State land, 14% F&WS, and 2% Native. All the active mining claims in the area, both State and Federal, are on State or Native land. No MILS points occur on F&WS land. The district is mostly made up of placer prospects. There is also some skarn deposit potential. Since the mineral activity in the district is restricted to non-Federal land, it is given only a medium priority for mineral assessment. It is recommended that the southern portion of this district be combined with the study of the Aniak and adjacent districts

12. FAIRHAVEN: (figure 13) The Fairhaven district includes 1.7% of active State claims, but only 0.4% of active Federal claims. There is a mixture of land management responsibilities in the district: 42% State, 21% Native, 17% NPS, and 20% BLM. Almost all of the MILS locations and active claims are on State or Native land. Only about 4% of the MILS locations are on Federal (NPS) land, which also includes a few active Federal placer claims. No MILS points or claims are on BLM land. The district includes a few past-producing coal mines, but is mostly a placer district. Because of the limited mineral activity on Federal land, especially on BLM land, the district is given only a medium priority for mineral assessment.

13. TOLOVANA: (figure 14) The Tolovana district is divided 42% State land, 7% Native, and 50% Federal land. Of the Federal land, about 75% is managed by the BLM and 25% by the F&WS. Most of the active claims in the district (2.4% of State claims and 0.9% of Federal claims), both State and Federal, are on State land. About 50% of the MILS locations in the district are on BLM land, mainly on the northeast end of the district, adjacent to the Federal land in the Circle district. The high mineral potential Federal lands in the district could be included in a study of the Circle district. (See figure 3 for expanded Circle study area). MILS locations are commonly associated with granitic mineral terranes. Vein-type deposits predominate and include a variety of commodities including gold, antimony, rare-earth elements, mercury, and tin. The Tolovana district is given a high priority for mineral assessment. Areas with mineral activity should be examined along with a mineral assessment of the Circle district. It is recommended that no separate mineral assessment be made of this district.

14. ANIAK: (figure 15 - Aniak district combined with Federal land holdings in the adjacent Iditarod, McGrath, Anvik and Marshall districts). The Aniak district includes 1.3% active State claims and 0.6% active Federal claims. About 57% of the area is State land, 15% Native, mainly along the Kuskokwim River, 15% F&WS, 9% BLM, and 3% NPS. The F&WS land is managed as a Preserve/Refuge. Most mineral activity is on State land. Even the Federal claims are mostly on State or Native land. There is very little mineral activity on the BLM land and only a little activity on the F&WS land. There would likely be Native interest in a mineral assessment of the district. A study of the district should be combined with an investigation of the Federal land holdings in the adjacent Iditarod, McGrath, Anvik and Marshall districts (see figure 15). Mineral terranes in BLM land are comprised of mafic volcanic rocks including an ophiolite terrane, as well as granitic rocks. These terranes are associated with vein deposits of gold and mercury. There is some placer gold potential in the area as well. Because of limited mineral activity on

Federal land, the district proper has only a medium priority for mineral assessment. A higher priority may be given to a mineral assessment of the combined Federal lands in the Aniak and adjacent districts.

15. CHISTOCHINA: (figure 16) The Chistochina district contains only 0.1% of the active Federal claims and 0.9% of the active State claims in Alaska. Much of the district is divided between State (34%), Native (34%), and NPS (30%) lands. Most of the mineral activity is on State and Native land. There is little activity in the 2% of BLM land in the district. The BLM land is situated in the northern part of the district and should be included in a study of the Delta River district to the north. (See figure 6 for expanded Delta River district study area.)

## **GENERAL DISCUSSION**

Given the assumptions and analysis above, the workgroup assigned relative rankings of very high, high and medium to each of the 15 top ranked mining districts in Alaska.

VERY HIGH RANKING: Our analysis indicates that the Circle (figure 3), Admiralty (figure 4), and Delta River (figure 6) mining districts have a very high ranking for future study. Past and present mineral activity is associated with Federal lands in each of these districts. The potential for additional mineral discoveries exists in each district.

For logistical efficiency, areas of high mineral potential adjacent to a district can be combined with mineral assessments of the Circle and Delta River districts. An example is the Circle mining district where the northern part of Fairbanks and eastern parts of the Tolovana districts could be added (figure 3). Both have extensive Federal lands adjacent to the Circle district. In addition, the northern part of the Chistochina district could be added to the Delta River district (figure 6). These possibilities enhance the rankings for the Circle and Delta districts, and incorporates the flexibility discussed in our approach.

Although the Ketchikan Mining District study was published by the BuMines in 1995, the study was rushed and incompletely published because of the closure of the agency. Given the high rating of the mining district and the geophysical survey being flown this spring, a year of follow up field studies and a more complete publication of results may be warranted.

HIGH RANKING: The Aniak mining district (figure 15) can be given a high ranking if mineralized areas that occur near the boundaries of the mining district are incorporated into the study area. There has been mineral activity on Federal lands in adjacent parts of Aniak, Iditarod, McGrath, Anvik, and Innoko and Marshall districts. The expanded Aniak district is outlined in figure 15.

MEDIUM RANKING: Other districts that ranked high on the preliminary prioritization list have subsequently been assigned medium ranking for several reasons. These include Bristol Bay, Nome, Bonnifield, Yentna, Willow Creek, Hot Springs, Innoko, and Fairhaven. The main reason

for the lower ranking is the lack of Federal land in many of these districts. In some districts with a significant amount of Federal land, the land is managed as a park or refuge. In others, the areas of high mineral potential and mineral activity are situated on State or private lands. In at least one district, the high ranking is due to the presence of an extensive claim block around a single mineralized site (i.e., Pebble Copper in the Bristol Bay district).

**LOW RANKING:** In the remaining districts, the BLM does not recommend conducting large scale mining district studies, but rather would approach these areas on an issue or site specific basis. Issues could include land management issues, commodity specific studies, and other studies.

The ranking determined by the above exercise is strictly preliminary in nature. An important component yet to be considered is “customer” input. Discussion with various customers may bring other factors to light that the workgroup has not taken into consideration.

## **PROPOSED PLAN**

BLM proposes to continue mineral assessment studies currently in progress. Field work for the Koyukuk area in interior Alaska, and the Kupreanof and Petersburg mining districts of southeast Alaska will be completed in the year 2000. Follow up work on the recent geophysical surveys in both areas will also continue.

Based on the approach developed in this document, the BLM will conduct multi-year mining districts studies in the districts ranked as very high and high in the preceding section and in the relative order of importance as listed in Table 1. Plans will then call for a multi-year study in the Circle mining district, which would include adjacent parts of the Fairbanks and Tolovana mining districts. Concurrently or subsequently, a one year follow up study of the Ketchikan area would be undertaken, and then study of the Admiralty Island mining district would commence.

At the conclusion of the Circle and Admiralty studies, work would begin in the Delta River and adjacent areas in the Chistochina mining district. And depending on funding, a concurrent or subsequent study of Federal land in the Aniak, including portions of the Iditarod, McGrath, Anvik, Innoko and Marshall mining districts would be undertaken.

BLM would continue to conduct special studies that from time to time are required by events or issues. Special mineral assessment and economic studies might involve lands slated for land exchanges, in support of land planning and other public purposes. Depending on funding and personnel availability, these special studies might require changes to this proposed schedule.

## **PUBLIC REVIEW PROCESS**

This document presents an approach to planning for future mineral assessment studies on Federal lands in Alaska. We have ranked Federal lands of the State requiring future study. The approach

we used is not the only way to rank the remaining work. We would like to hear your thoughts about which lands in Alaska should be studied, and in which order. Given our limited budgets and Alaska's large Federal land base, it will take several decades to conduct studies of all mining districts, so a method of ranking must be used.

BLM welcomes your comments about this approach and proposed plan. The public comment period for this Draft Plan is listed in the cover letter. This document is being distributed to regional native corporations, Federal and State land managers and other interested parties. Mineral assessment staff members will be available for presentations and discussion. Written comments would be appreciated. Comments on the plan will be reviewed and a final plan will be released.

Written comments can be forwarded to:

Juneau Mineral Information Center  
Bureau of Land Management  
100 Savikko Road  
Douglas, AK 99824

This document is also available on the Internet at <http://juneau.ak.blm.gov/maplan/>. Comments may also be entered at the site.

If you have questions about our process or this document, please contact Roger Baer (907-364-1554; [rbaer@ak.blm.gov](mailto:rbaer@ak.blm.gov)).

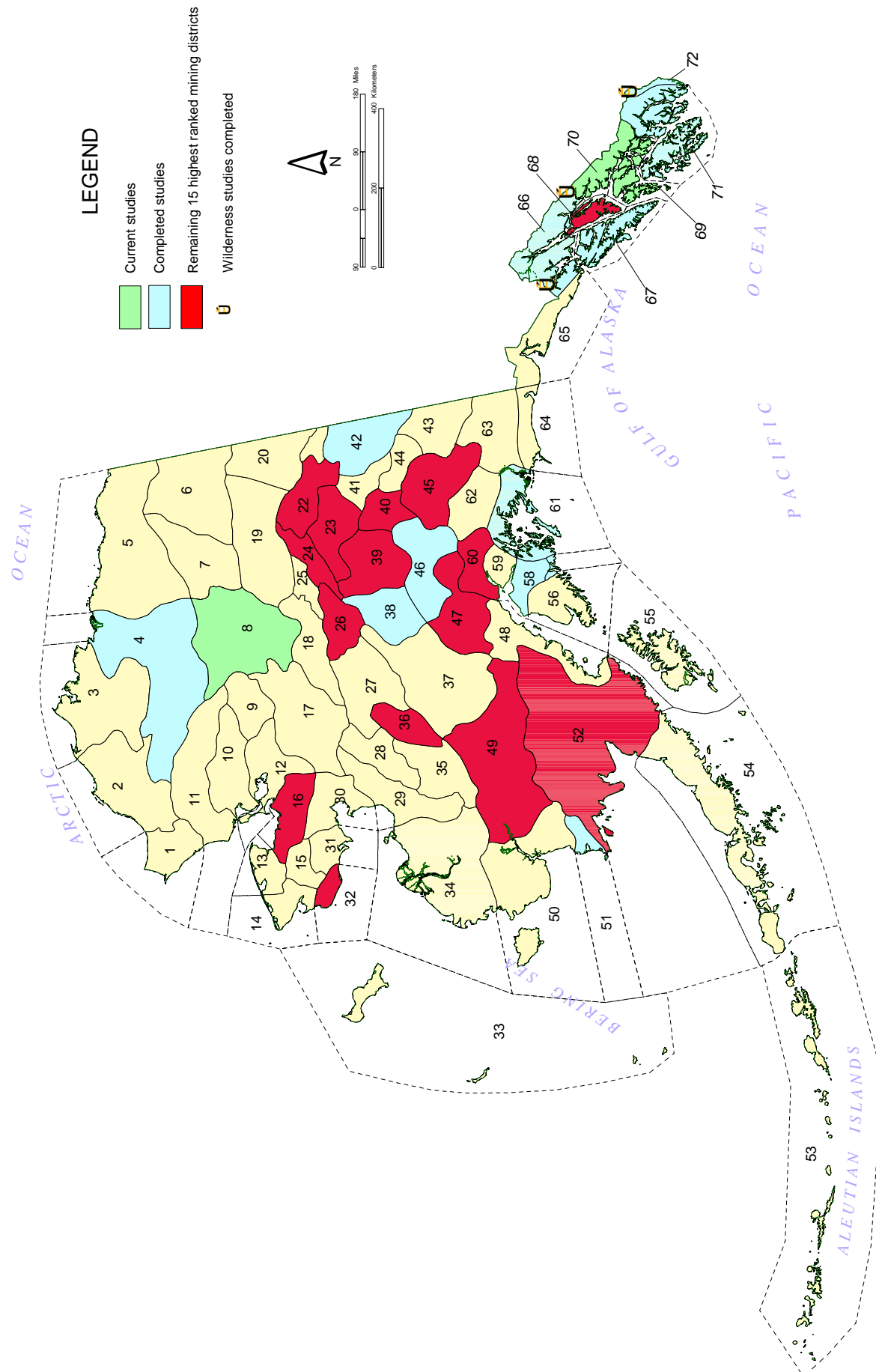
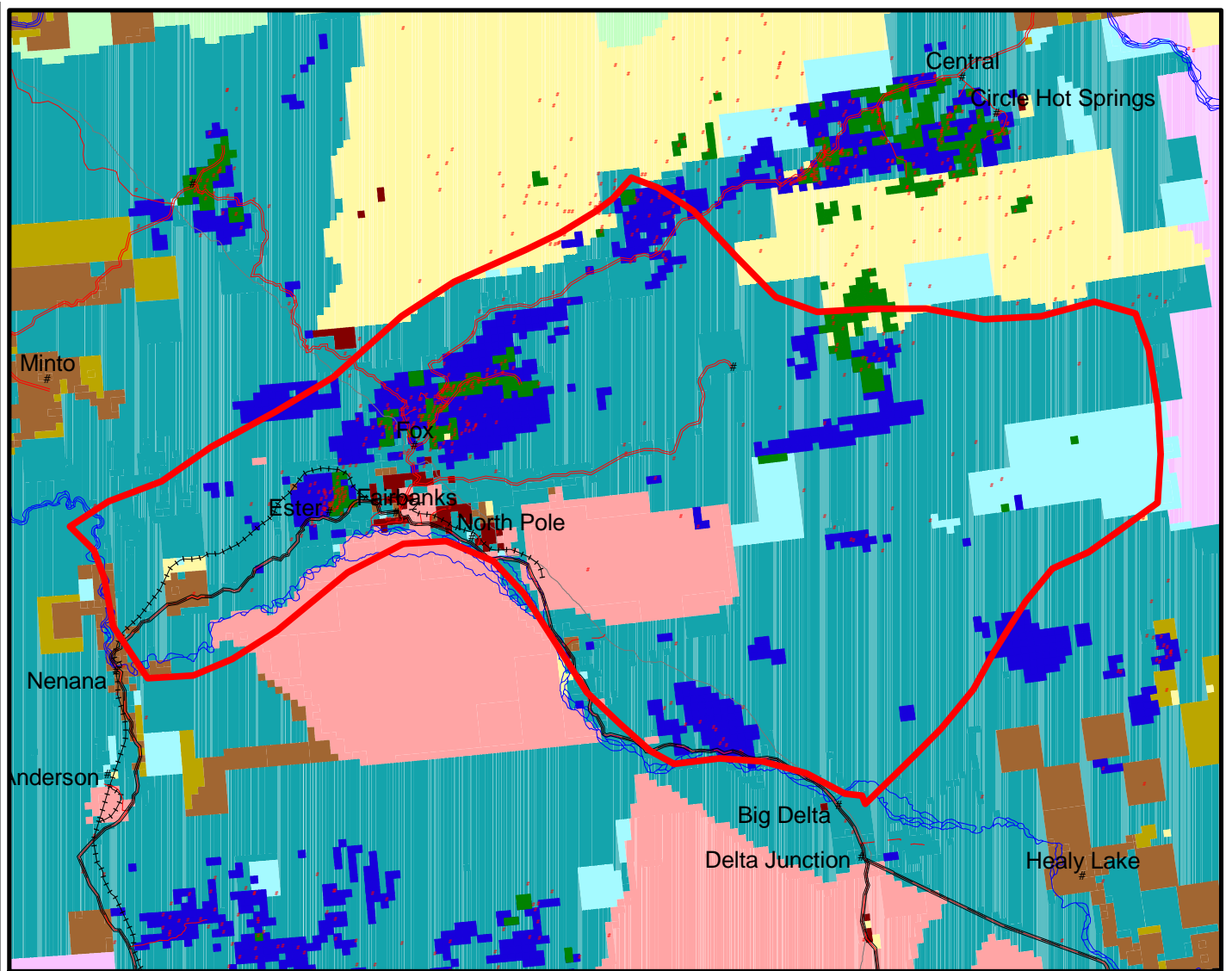


Table 2: Mining districts sorted by name

Name	Map no.	Name	Map No.
ADMIRALTY	68	KANTISHNA	38
ALASKA PENINSULA	54	KETCHIKAN	71
ALEUTIAN ISLANDS	53	KIANA	10
ANCHORAGE	59	KODIAK	55
ANIAK	49	KOUGAROK	15
ANVIK	29	KOYUK	30
BARROW	3	KOYUKUK	8
BERING SEA	33	KUPREANOF	69
BETHEL	50	LISBURNE	1
BLACK	20	MARSHALL	34
BONNIFIELD	39	MCGRATH	37
BRISTOL BAY	52	MELOZITNA	18
CANNING	5	NELCHINA	62
CHANDALAR	7	NIZINA	63
CHICHAGOF	67	NOATAK	11
CHISANA	43	NOME	32
CHISTOCHINA	45	PETERSBURG	70
CIRCLE	22	PORT CLARENCE	14
COLVILLE	4	PRINCE WILLIAM SOUND	61
COUNCIL	31	RAMPART	25
DELTA RIVER	40	REDOUBT	48
EAGLE	21	RUBY	27
FAIRBANKS	23	SELAWIK	12
FAIRHAVEN	16	SERPENTINE	13
FORTYMILE	42	SEWARD	57
GOODNEWS BAY	51	SHEENJEK	6
GOODPASTOR	41	SHUNGNAK	9
HOMER	56	TOK	44
HOPE	58	TOLOVANA	24
HOT SPRINGS	26	VALDEZ CREEK	46
HUGHES	17	WAINWRIGHT	2
HYDER	72	WILLOW CREEK	60
IDITAROD	35	YAKATAGA	64
INNOKO	36	YAKUTAK	65
JUNEAU	66	YENTNA	47
KAIYUH	28	YUKON FLATS	19

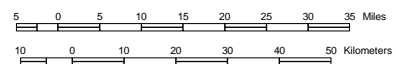
Table 3: Mining districts sorted by map no.

Map No.	Name	Map No.	Name
1	LISBURNE	37	MCGRATH
2	WAINWRIGHT	38	KANTISHNA
3	BARROW	39	BONNIFIELD
4	COLVILLE	40	DELTA RIVER
5	CANNING	41	GOODPASTOR
6	SHEENJEK	42	FORTYMILE
7	CHANDALAR	43	CHISANA
8	KOYUKUK	44	TOK
9	SHUNGNAK	45	CHISTOCHINA
10	KIANA	46	VALDEZ CREEK
11	NOATAK	47	YENTNA
12	SELAWIK	48	REDOUBT
13	SERPENTINE	49	ANIAK
14	PORT CLARENCE	50	BETHEL
15	KOUGAROK	51	GOODNEWS BAY
16	FAIRHAVEN	52	BRISTOL BAY
17	HUGHES	53	ALEUTIAN ISLANDS
18	MELOZITNA	54	ALASKA PENINSULA
19	YUKON FLATS	55	KODIAK
20	BLACK	56	HOMER
21	EAGLE	57	SEWARD
22	CIRCLE	58	HOPE
23	FAIRBANKS	59	ANCHORAGE
24	TOLOVANA	60	WILLOW CREEK
25	RAMPART	61	PRINCE WILLIAM SOUND
26	HOT SPRINGS	62	NELCHINA
27	RUBY	63	NIZINA
28	KAIYUH	64	YAKATAGA
29	ANVIK	65	YAKUTAK
30	KOYUK	66	JUNEAU
31	COUNCIL	67	CHICHAGOF
32	NOME	68	ADMIRALTY
33	BERING SEA	69	KUPREANOF
34	MARSHALL	70	PETERSBURG
35	IDITAROD	71	KETCHIKAN
36	INNOKO	72	HYDER



## LEGEND

- . MILS
- Federal Claims
- State Sites & Claims
- Land Status**
  - Bureau of Land Management
  - Fish and Wildlife Service
  - Forest Service
  - Military
  - National Park Service
  - Native Patent or IC
  - Native Selected
  - Private
  - State Patent or TA
  - State Selected
- Fairbank Mining District boundary



## LOCATION MAP



Figure 2. - First Ranking Mining District - Fairbanks.

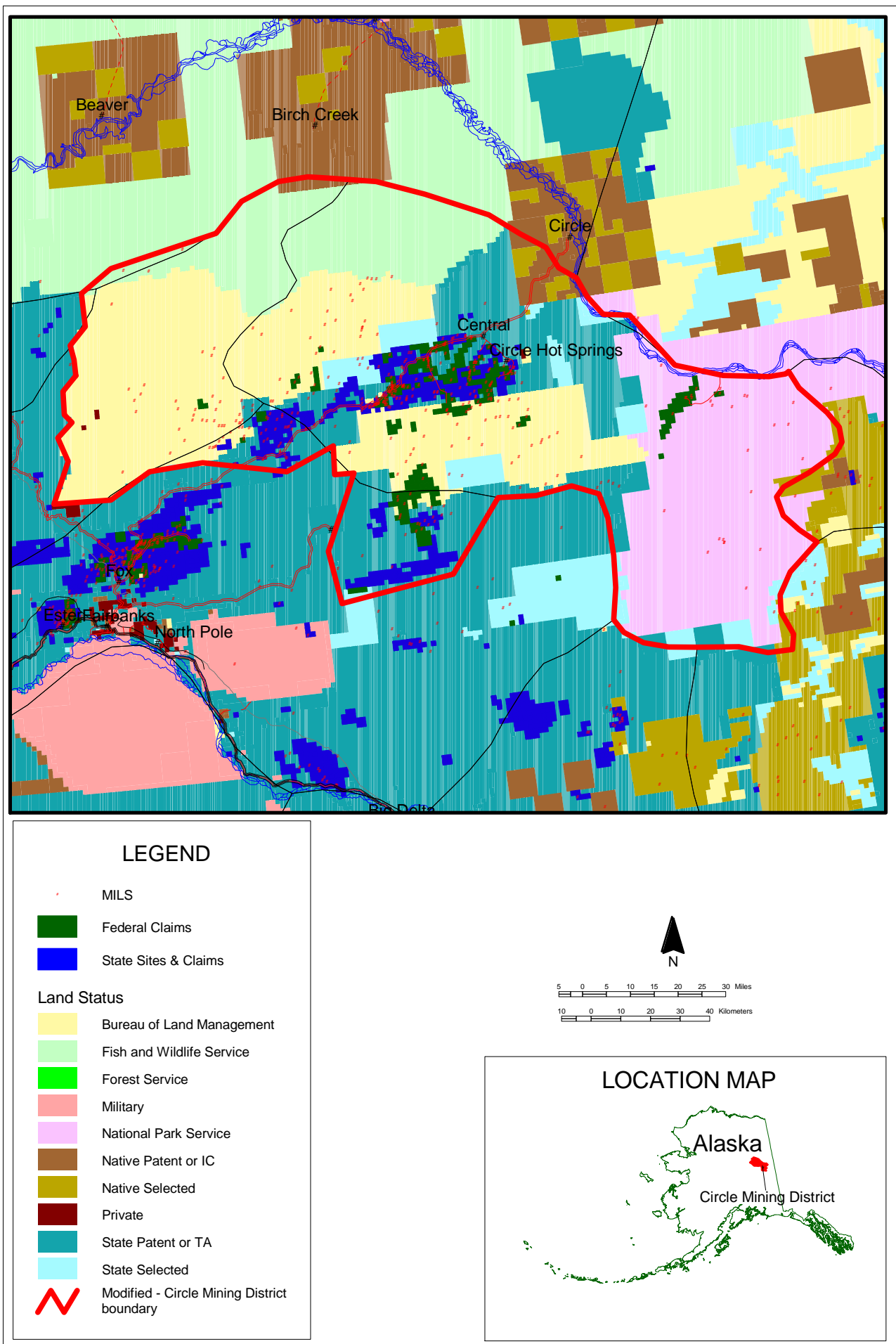
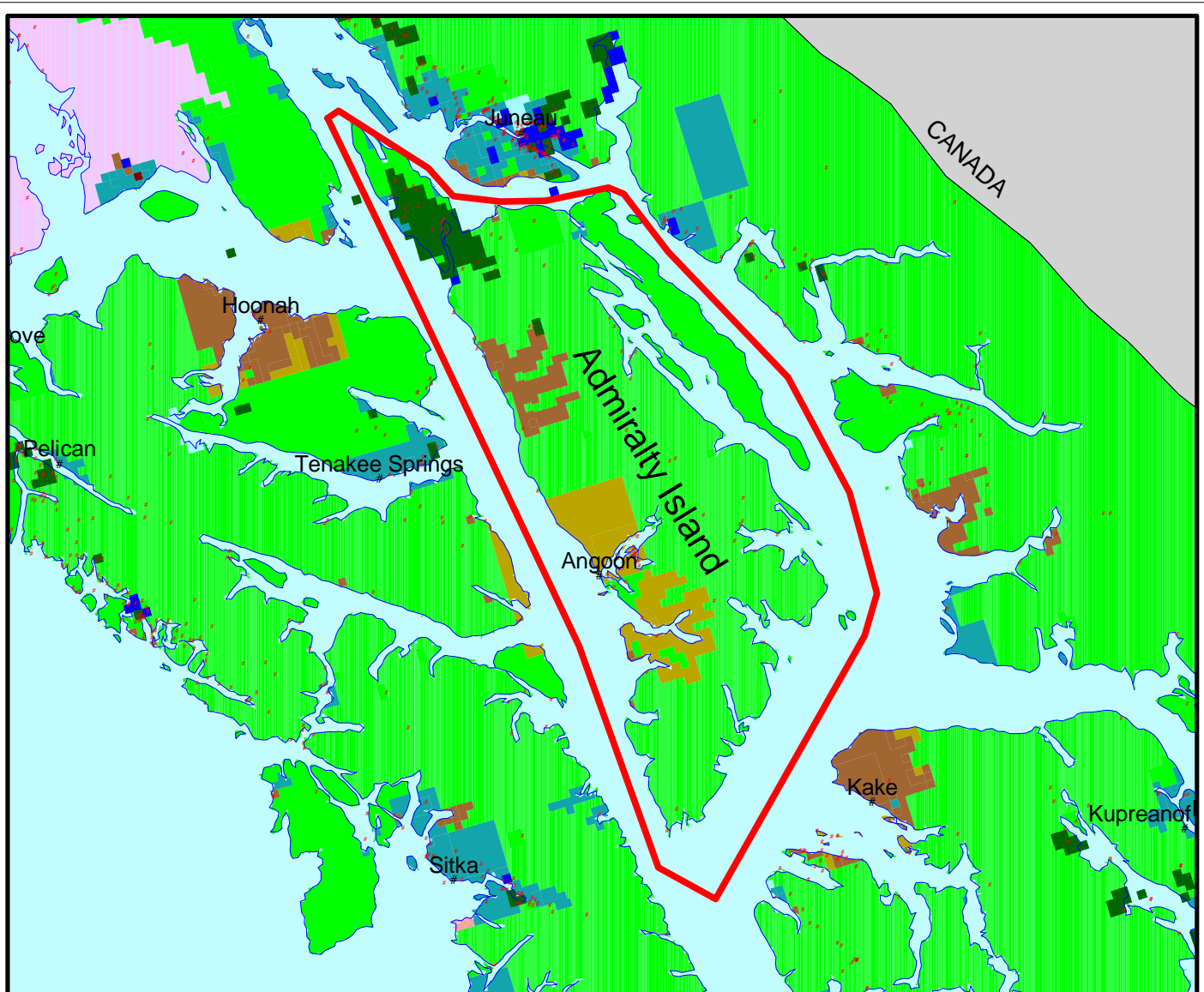


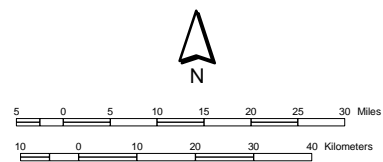
Figure 3. - Second Ranking Mining District - Expanded Circle.





## LEGEND

- MILS
- Federal Claims
- State Sites & Claims
- Land Status**
  - Bureau of Land Management
  - Fish and Wildlife Service
  - Forest Service
  - Military
  - National Park Service
  - Native Patent or IC
  - Native Selected
  - Private
  - State Patent or TA
  - State Selected
- Admiralty Mining District boundary



## LOCATION MAP

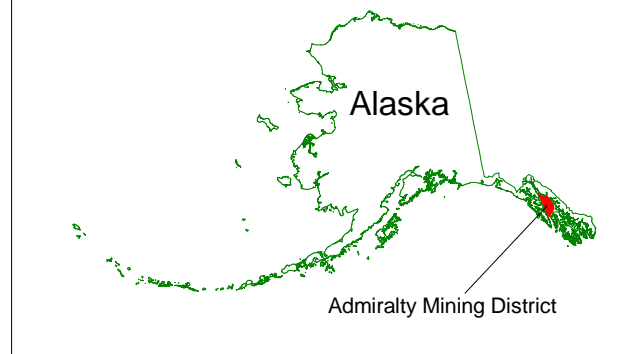
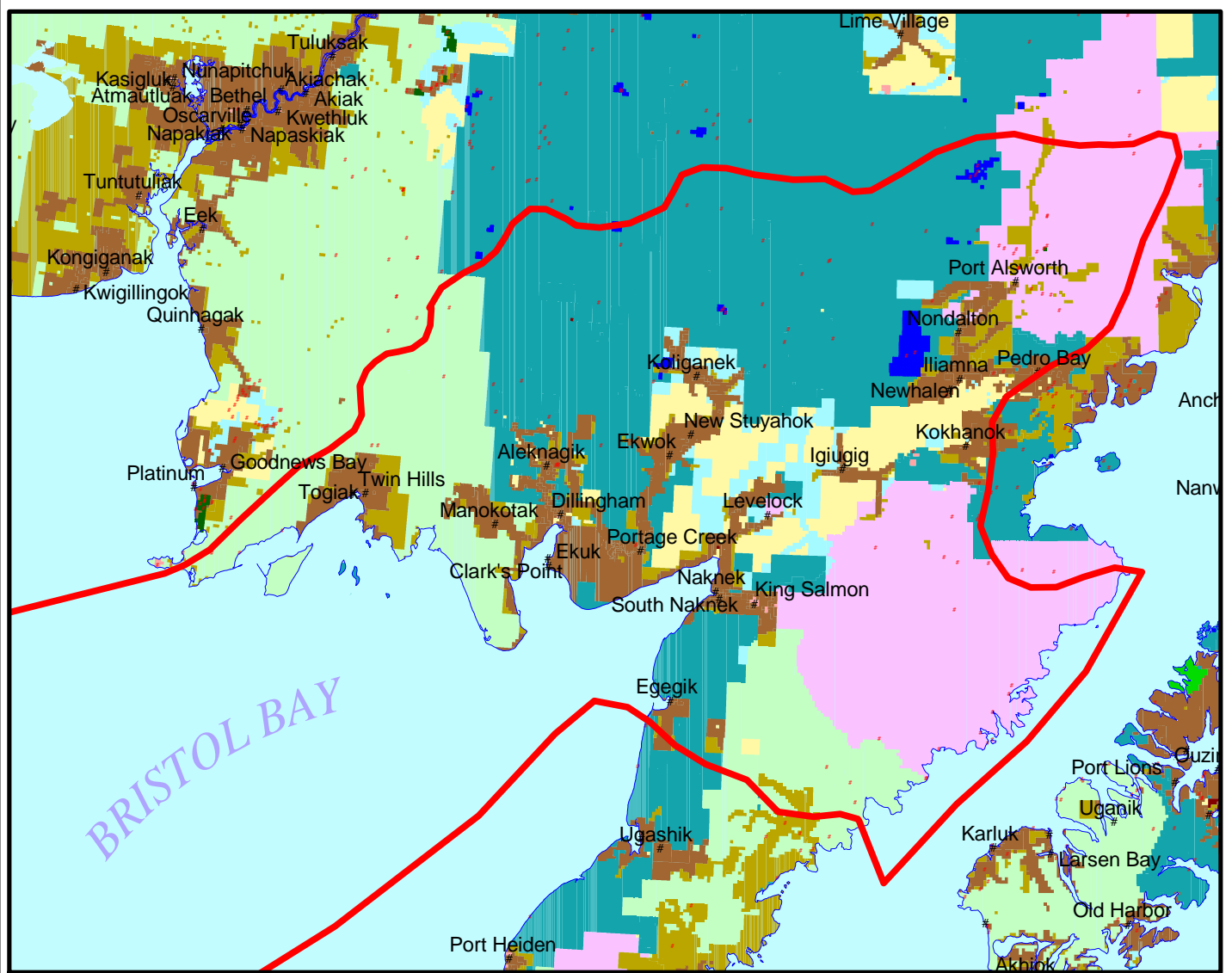
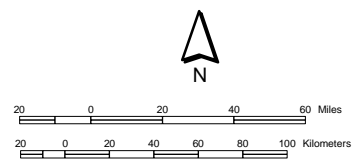


Figure 4. - Third Ranking Mining District - Admiralty.



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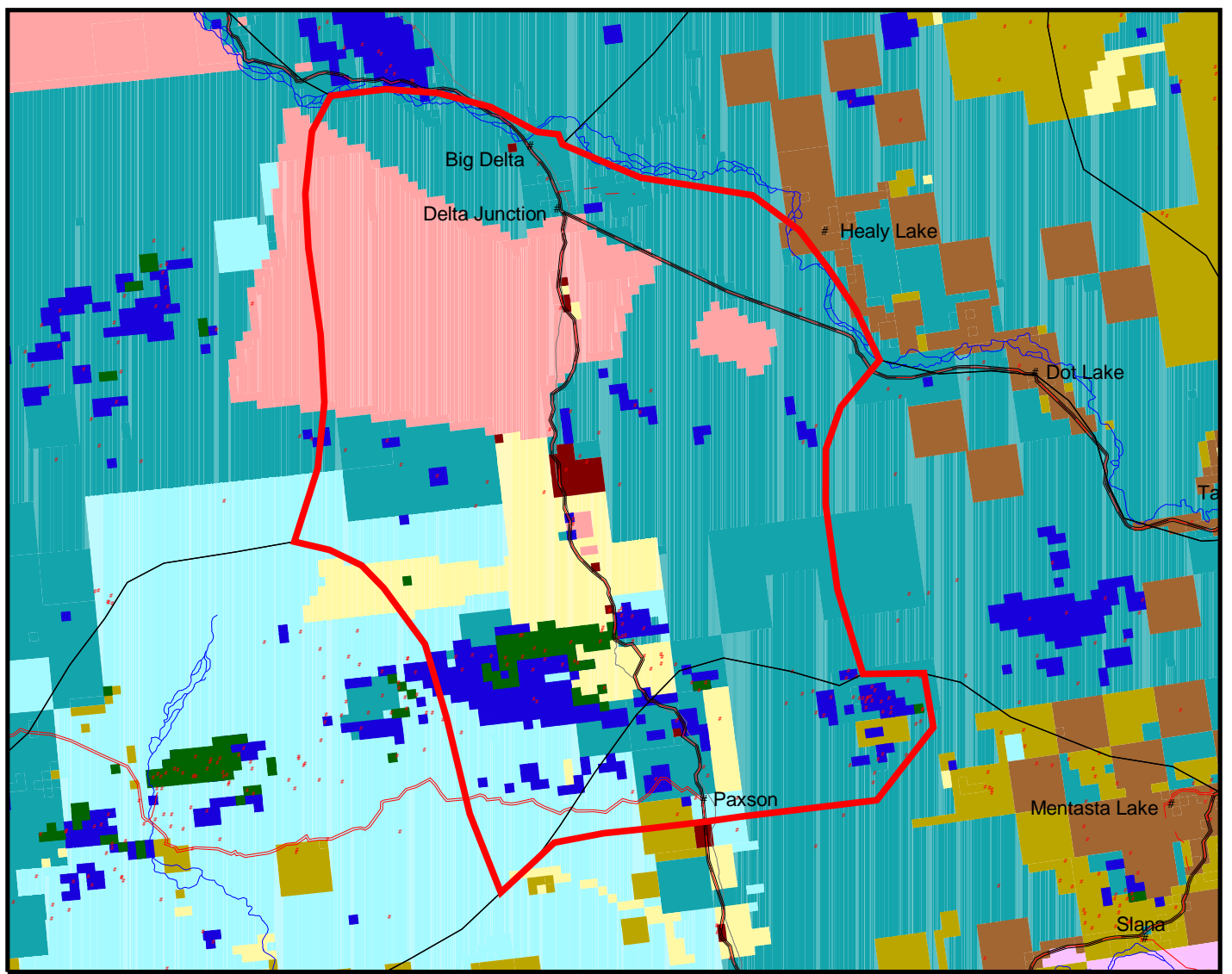
- . MILS
- Federal Claims
- State Sites & Claims
- Land Status**
  - Bureau of Land Management
  - Fish and Wildlife Service
  - Forest Service
  - Military
  - National Park Service
  - Native Patent or IC
  - Native Selected
  - Private
  - State Patent or TA
  - State Selected
- ~ Bristol Bay Mining District boundary



## LOCATION MAP

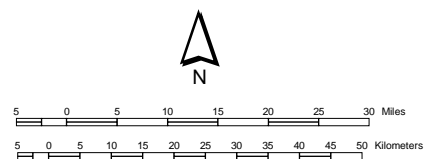


Figure 5. - Fourth Ranking Mining District - Bristol Bay.



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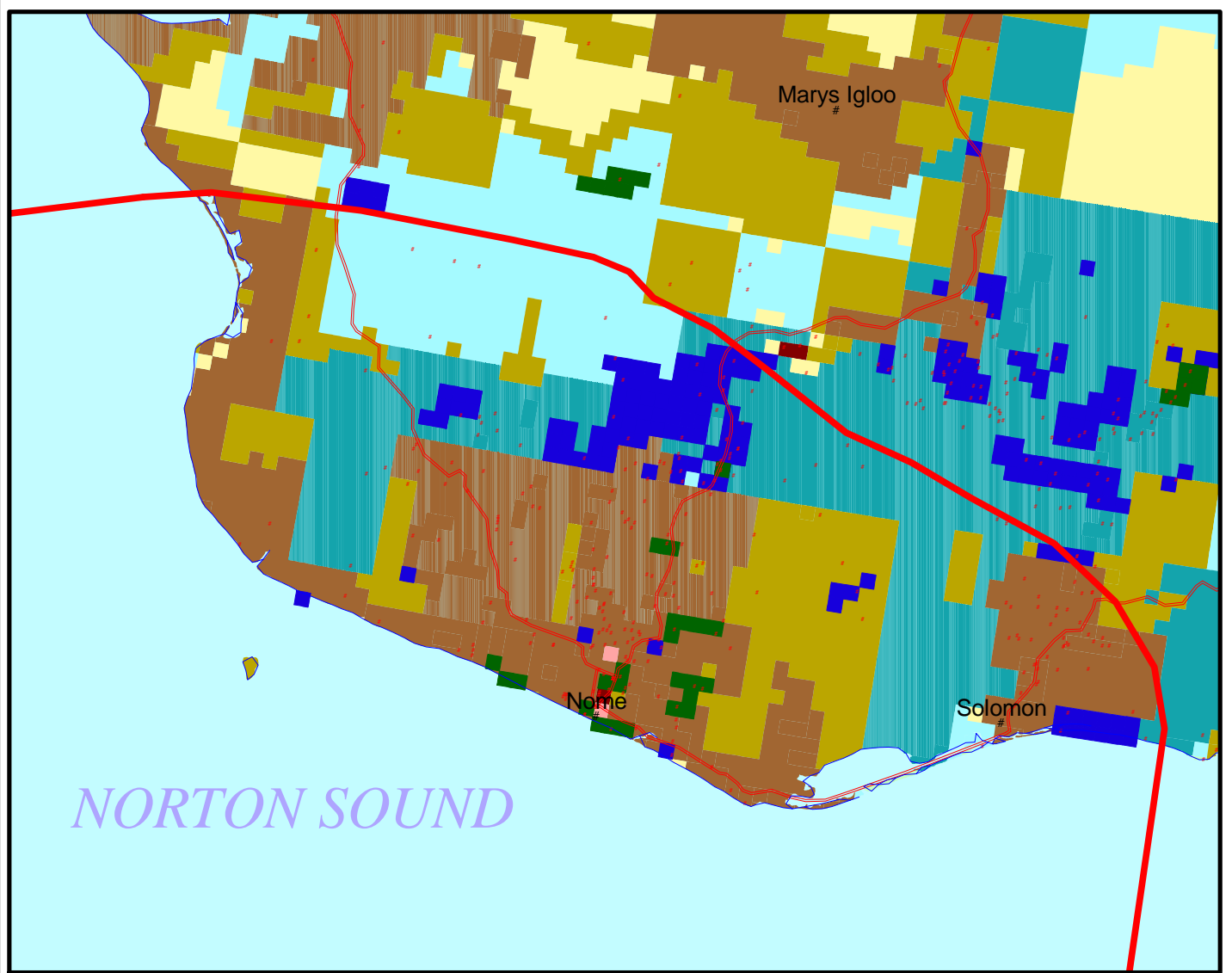
- . MILES
- Federal Claims
- State Sites & Claims
- Land Status**
  - Bureau of Land Management
  - Fish and Wildlife Service
  - Forest Service
  - Military
  - National Park Service
  - Native Patent or IC
  - Native Selected
  - Private
  - State Patent or TA
  - State Selected
  - Modified - Delta River Mining District boundary



## LOCATION MAP

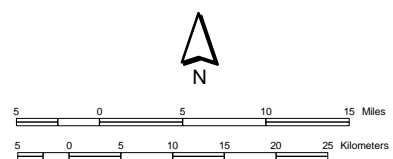


Figure 6. - Fifth Ranking Mining District - Expanded Delta River.



## LEGEND

- . MILS
- Federal Claims
- State Sites & Claims
- Land Status**
  - Bureau of Land Management
  - Fish and Wildlife Service
  - Forest Service
  - Military
  - National Park Service
  - Native Patent or IC
  - Native Selected
  - Private
  - State Patent or TA
  - State Selected
- ~ Nome Mining District boundary



## LOCATION MAP



Figure 7. - Sixth Ranking Mining District - Nome.

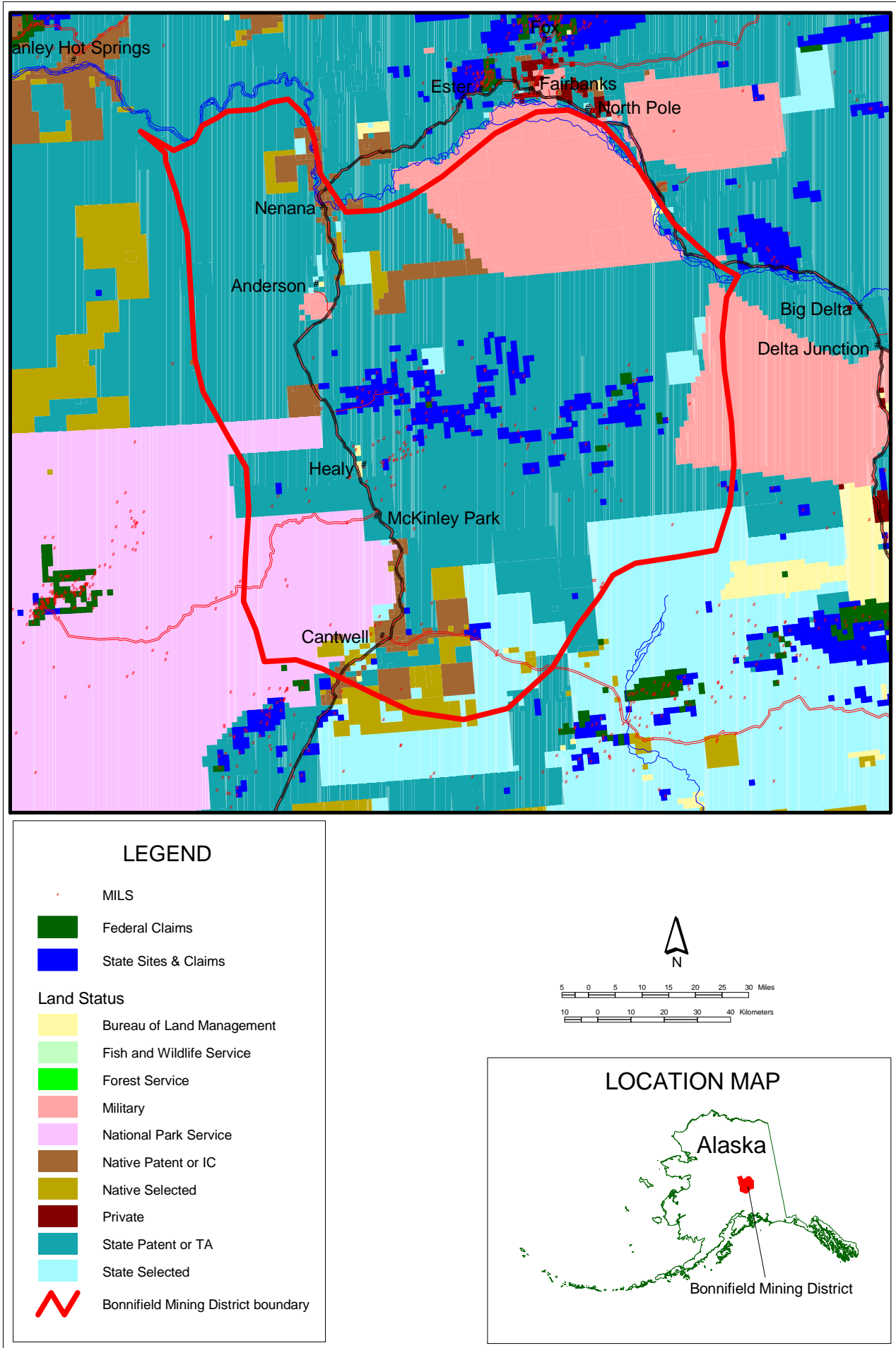


Figure 8. - Seventh Ranking Mining District - Bonfield.

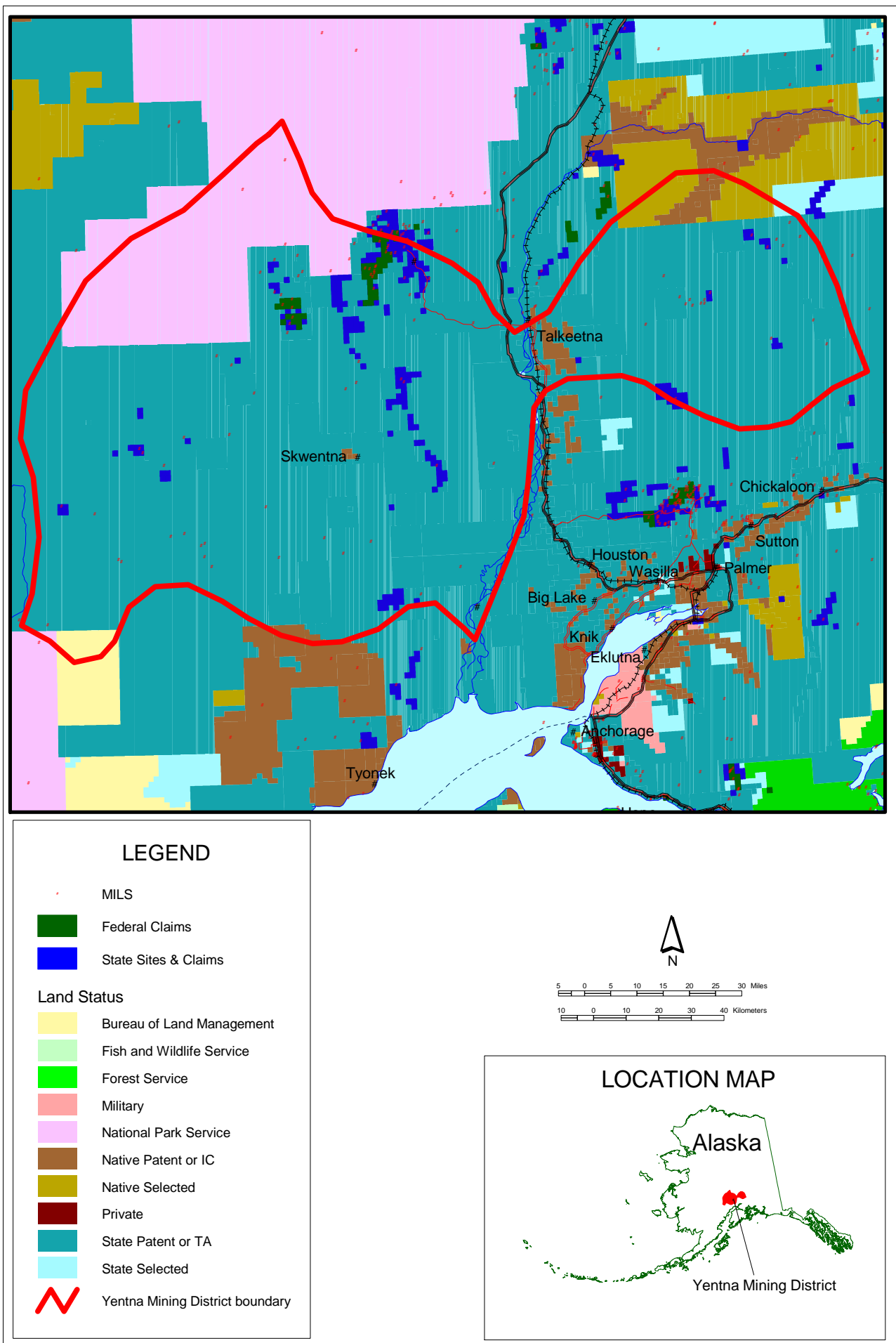


Figure 9. - Eighth Ranking Mining District - Yentna.

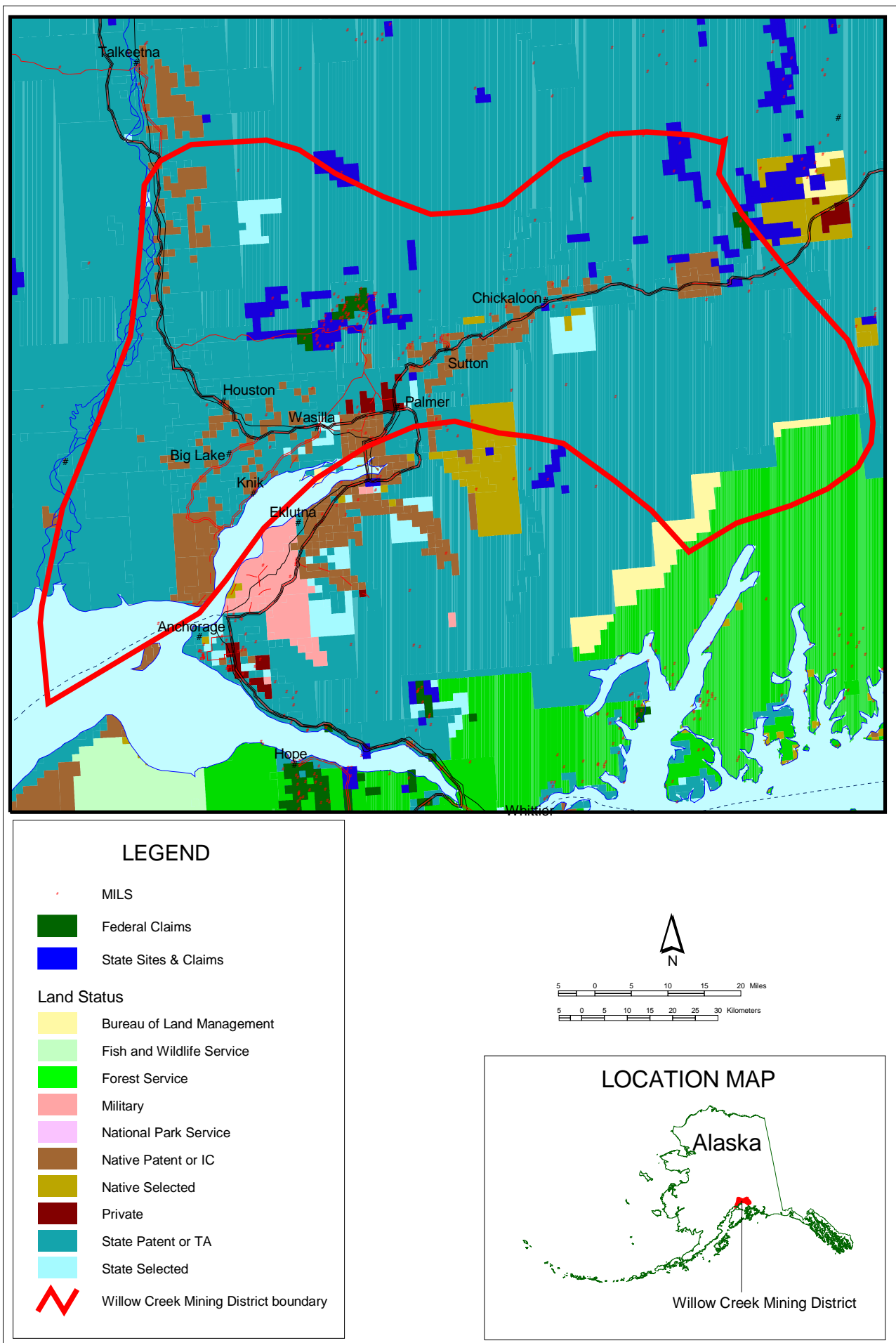


Figure 10. - Ninth Ranking Mining District - Willow Creek.



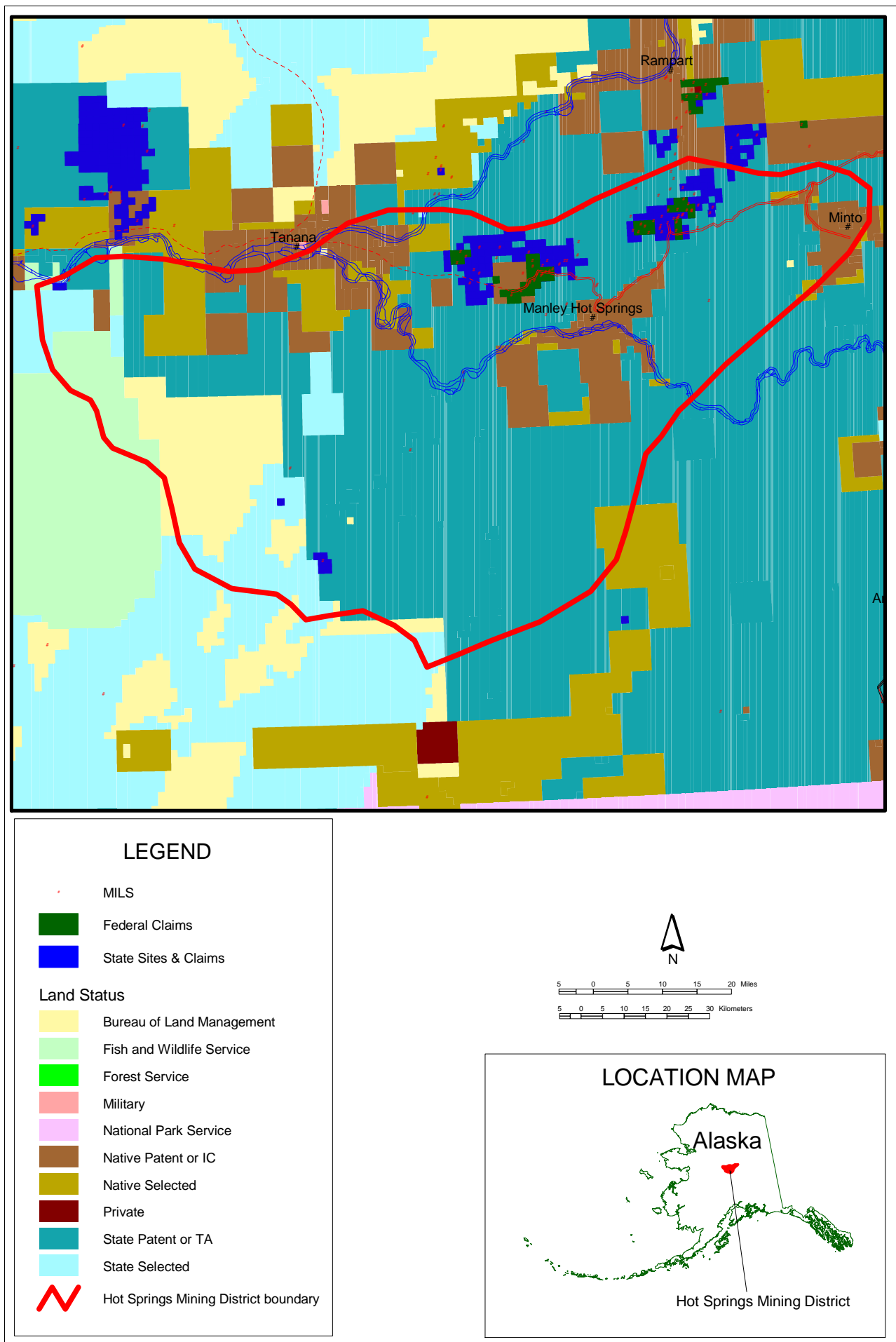


Figure 11. - Tenth Ranking Mining District - Hot Springs.



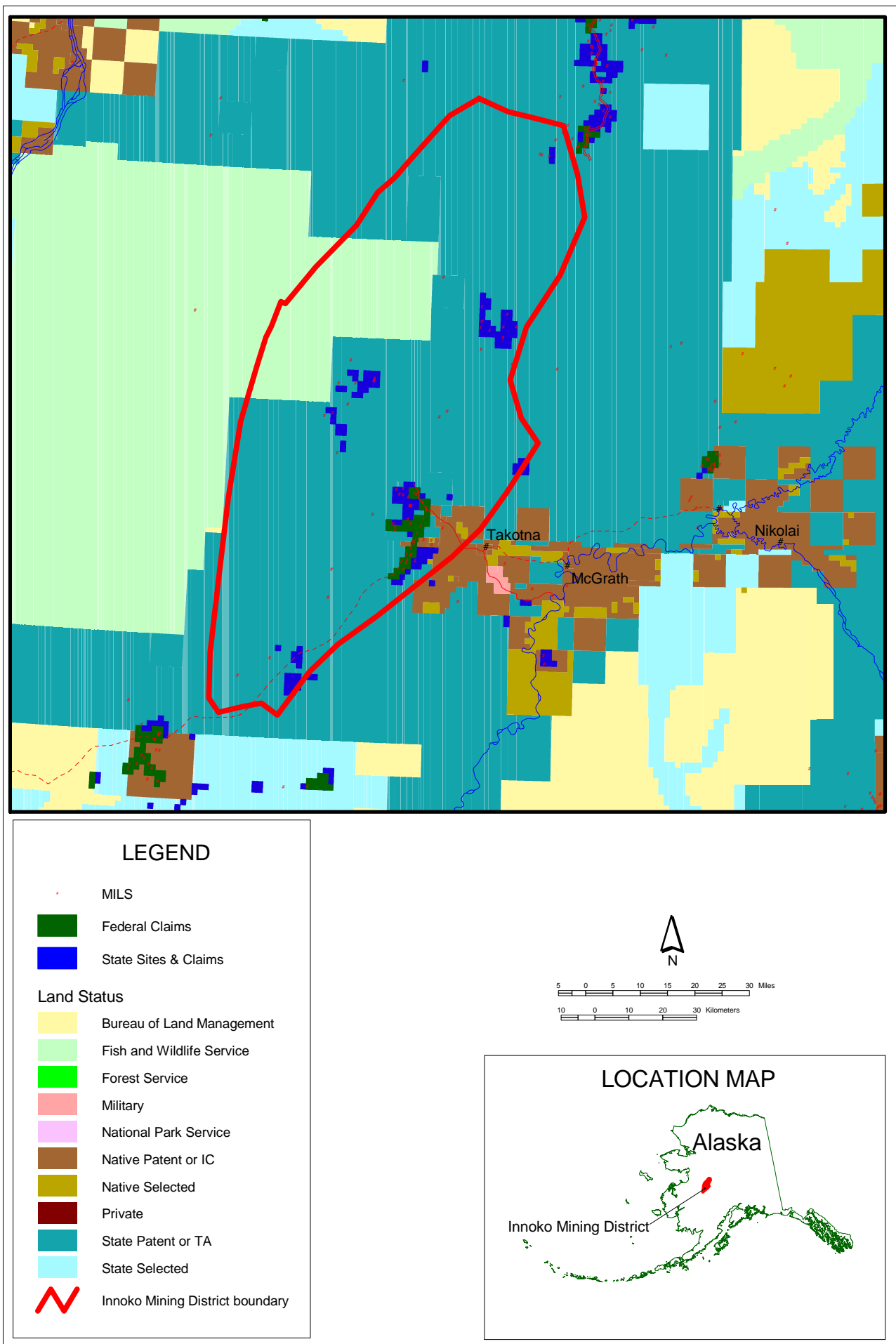


Figure 12. - Eleventh Ranking Mining District - Innoko.

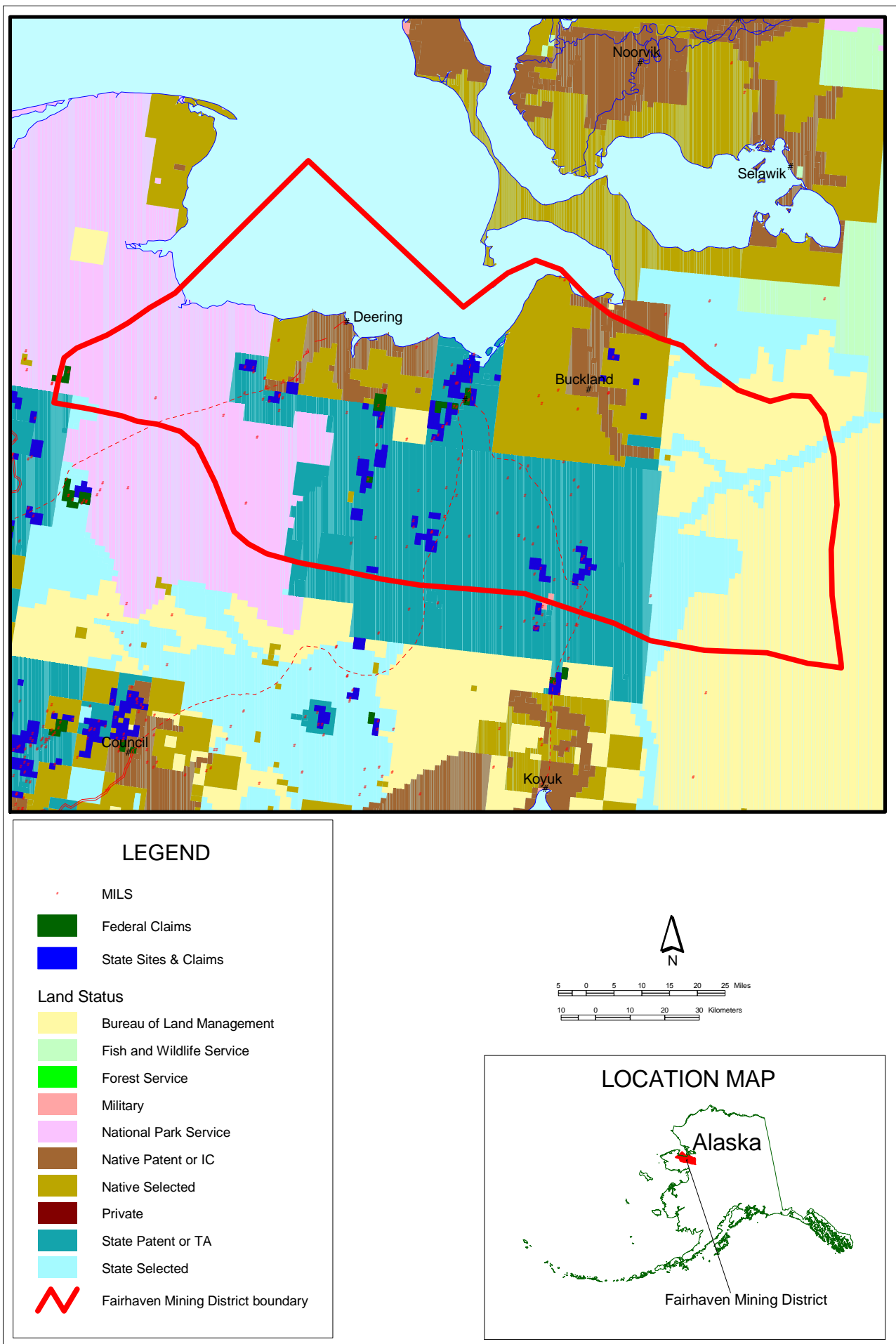


Figure 13. - Twelfth Ranking Mining District - Fairhaven.

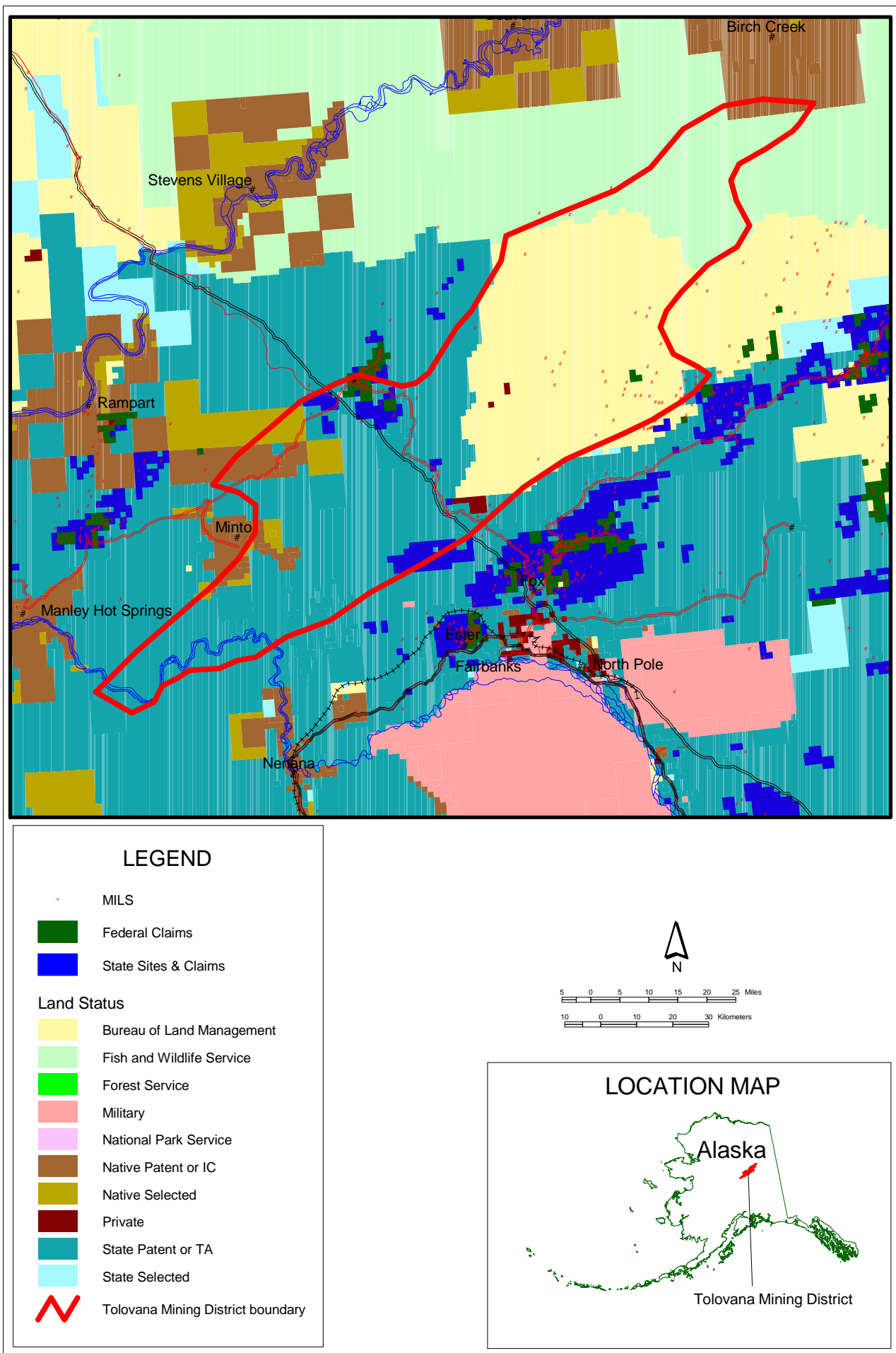


Figure 14. - Thirteenth Ranking Mining District - Tolovana.

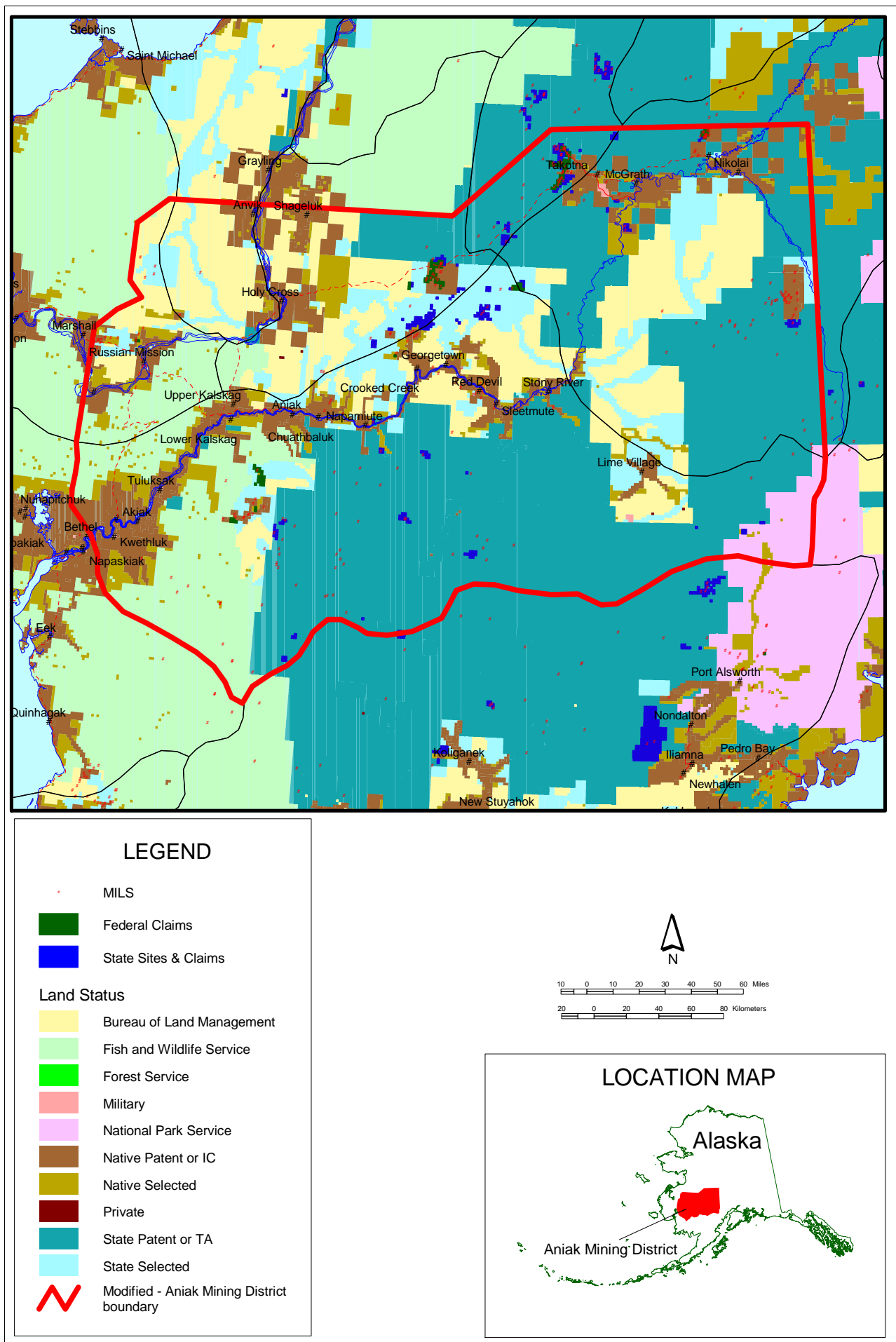


Figure 15. - Fourteenth Ranking Mining District - Expanded Aniak.

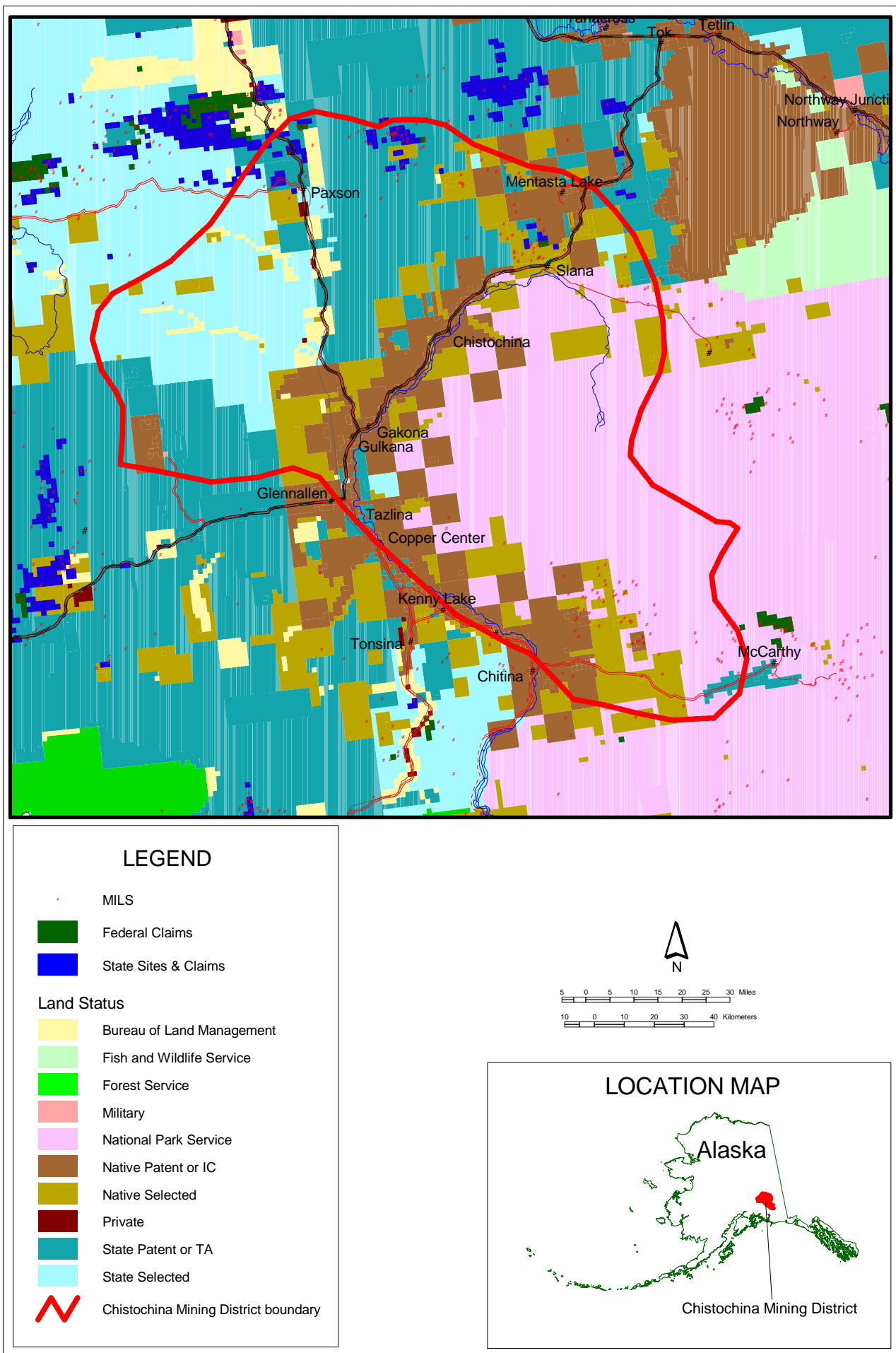


Figure 16. - Fifteenth Ranking Mining District - Chistochina.